



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0740; Directorate Identifier 2013-NE-24-AD]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Pratt & Whitney (PW) PW2037, PW2037D, PW2037M, PW2040, PW2040D, PW2043, PW2146, PW2240, PW2337, PW2643, and F117-PW-100 turbofan engines. This proposed AD was prompted by a rupture of the diffuser-to-high-pressure turbine (HPT) case flange. This proposed AD would require a one-time eddy current inspection (ECI) of affected engines with certain diffuser and HPT cases installed. This AD also proposes to require a fluorescent-penetrant inspection (FPI) of the diffuser case rear flange and HPT case front flange. We are proposing this AD to prevent failure of the diffuser-to-HPT case flange, which could lead to uncontained engine failure and damage to the airplane.

DATES: We must receive comments on this proposed AD by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; phone: 860-565-8770; fax: 860-565-4503. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Robert Morlath, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7154; fax: 781-238-7199; email: robert.c.morlath@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2013-0740; Directorate Identifier 2013-NE-24-AD” at the

beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We received a report of an engine event in October 2011 that resulted in a rupture of the engine diffuser-to-HPT case flange. The rupture caused the engine cowl doors to break open, which resulted in damage to the underside of the airplane's wing. Subsequent investigation revealed that the root cause of this rupture was a crack that originated in HPT case M-flange boltholes (the forward flange of the HPT case that mates with the rear outer flange of the diffuser case). This condition, if not corrected, could result in failure of the diffuser-to-HPT case flange, which may cause an uncontained engine failure and damage to the airplane.

Relevant Service Information

We reviewed PW Service Bulletin (SB) No. PW2000 72-763, Revision 1, dated August 30, 2013, and PW PW2000 Series Engine Manual part number 1A6231. The SB describes procedures for inspecting the flanges of the HPT case and the diffuser case.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require an on-wing ECI of the diffuser case and HPT case flanges. This proposed AD would also require an FPI of all engine diffuser cases and all HPT cases.

Differences Between the Proposed AD and the Service Information

PW SB No. PW2000 72-763, Revision 1, dated August 30, 2013, requires that operators complete an on-wing ECI by August 31, 2013. We are proposing that the ECI be performed within 100 flight cycles or 30 days after the effective date of this AD, whichever is earlier.

Costs of Compliance

We estimate that this proposed AD will affect 638 engines installed on airplanes of U.S. registry. Of the 638 engines, we estimate that about 58 engines will be subject to ECI and all engines will be subject to the FPI. We also estimate that it would take about 5 hours to perform the ECI and 3 hours to perform the FPI required by this proposed AD. Materials cost for the FPI will be about \$20 per engine. The average labor rate is \$85 per hour. Based on these figures, we estimate the total cost of this proposed AD to U.S. operators to be \$200,100.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds

necessary for safety in air commerce. This proposed regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Pratt & Whitney: Docket No. FAA-2013-0740; Directorate Identifier 2013-NE-24-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Pratt & Whitney (PW) PW2037, PW2037D, PW2037M, PW2040, PW2040D, PW2043, PW2146, PW2240, PW2337, PW2643, and F117-PW-100 turbofan engines.

(d) Unsafe Condition

This AD was prompted by a rupture of the diffuser-to-high-pressure turbine (HPT) case flange. We are issuing this AD to prevent failure of the diffuser-to-HPT case flange, which could lead to uncontained engine failure and damage to the airplane.

(e) Compliance

Unless already done, comply with this AD within the compliance times specified.

(1) For diffuser and HPT cases identified by serial number (S/N) in Table 1 to paragraph (e) of this AD:

(i) Within 100 flight cycles or 30 days after the effective date of this AD, whichever is earlier, eddy current inspect the diffuser case and the HPT case M-flange.

(ii) For engines installed on the aircraft, use paragraphs 3.G. through 3.L. in the “For Engines Installed on the Aircraft” section of the Accomplishment Instructions of PW Service Bulletin (SB) No. PW2000 72-763, Revision 1, dated August 30, 2013, to perform the inspection.

(iii) For engines removed from the aircraft, use paragraphs 3.B. through 3.G. in the “For Engines Removed From the Aircraft” section of the Accomplishment Instructions of PW Service Bulletin (SB) No. PW2000 72-763, Revision 1, dated August 30, 2013, to perform the inspection.

Table 1 to Paragraph (e) – Diffuser and HPT Case P/Ns and Serial Numbers

Diffuser Case Part Number (P/N)	Diffuser Case S/N	HPT Case P/N	HPT Case S/N
1B7407-001	DGUSAA0114	1A9030	RM6300
1B7407	WE2452	1B2440	DKLB40125
1B7407	DGUSAA0097	1B2440	DKLBCH3429
1B7407	DGUSAA0670	1B2440	DKLBBCS1032
1B7407-001	DGUSAA0622	1B2440	DKLBBC00030
1B3055-001	DGUSAA0247	1B2440	DKLBBC07691
1B7461	DGGUAK1308	1B2440	DKLBDB5108
1B7461	DGGUAK1306	1B2440	DKLBDB5153
1B7461	DGGUAK1356	1B2440	DKLBDB3358
1B7477	DGGUAL1445	1A9030	RM6353
1B7477	DGGUAL1492	1A9030	PD3348
1B7477	DGGUAL1501	1A9030	PD3280
1B7477	DGGUAL1597	1A9030	ND5644
1B4091-001	RT6356	1B2440	DKLBBDP0225
1B4091-002	ST2044	1A9030	DKLBBD3621
1B4091-005	PF3203	1A9030	PD3290
1B7461	DGGUAK1377	1B2440	WG6904
1B7477	DGGUAL1548	1B2440	WV1807
1B7407	DGGUAK0189	1B2440	WX2639
1B7407	DGUSAA0443	1B2440	WZ4057
1B7477	DGGUAL1441	1B2440	WX2664
1B7477	DGGUAL1560	1A9030	RM6359

Diffuser Case Part Number (P/N)	Diffuser Case S/N	HPT Case P/N	HPT Case S/N
1B7407-001	DGUSAA0329	1B2440	DKLBCM8956
1B7407	DGUSAA0334	1B2440	DKLBCM0214
		1B2440	DKLBDB5069
		1B2440	DKLBDB02548
		1B2440	DKLBDC7336
		1B2440	DKLBDB03372
		1B2440	WM6913
		1B2440	DKLBDB6606
		1B2440	DKLBDB2861
		1B2440	DKLBCT1660
		1B2440	DKLBDB94641
		1B2440	DKLBDBX8092

(2) For all diffuser and HPT cases:

(i) At the next piece part exposure and every piece part exposure thereafter, perform a high sensitivity fluorescent-penetrant inspection (FPI) of the entire diffuser case rear flange (M-flange) and bolt holes.

(ii) At the next piece part exposure and every piece part exposure thereafter, perform a high sensitivity FPI of the entire HPT case forward flange (M-flange) and bolt holes.

(f) Prohibition Statement

After the effective date of this AD, do not install any engine with a diffuser or HPT case with serial number listed in Table 1 to paragraph (e) of this AD, onto any aircraft, that was not inspected per paragraph (e) of this AD.

(g) Credit for Previous Actions

If you performed an eddy current inspection of the diffuser case and HPT case M-flange using paragraphs 3.G. through 3.L. in the “For Engines Installed on the

Aircraft” section or paragraphs 3.B. through 3.G. in the “For Engines Removed from the Aircraft” section of the Accomplishment Instructions of PW SB PW2000 72-763, dated March 22, 2013, you met the requirements of paragraph (e)(1) of this AD.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(i) Related Information

(1) For more information about this AD, contact Robert Morlath, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7154; fax: 781-238-7199; email: robert.c.morlath@faa.gov.

(2) Pratt & Whitney Engine Manual, part number 1A6231, Chapter 72-41-00, Inspection/Check-02, (Task 72-41-00-230-002) and Chapter 72-52-00, Inspection/Check-02 (Task 72-52-00-230-000), which are not incorporated by reference in this AD, can be obtained from Pratt & Whitney, using the contact information in paragraph (i)(3) of this AD.

(3) For service information identified in this AD, contact Pratt & Whitney, United Technologies Corporation, 400 Main St., East Hartford, CT 06108; phone: 860-565-8770; fax: 860-565-4503.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on October 7, 2013.

Colleen M. D'Alessandro,
Assistant Directorate Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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